



## **SOCIETY CATCHING UP WITH THE TECHNOLOGY**

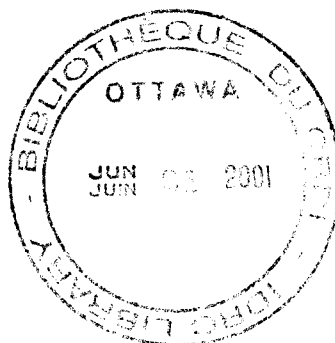
**ASSESSING THE IMPACT OF INFORMATION  
AND TELECOMMUNICATIONS  
ON POLICY FORMULATION  
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## ABSTRACT

This paper will outline and analyze a research project aimed at contributing to the development of institutional policies for the Internet in Latin America and the Caribbean.

The project is focused on answering questions related to understanding the value added by the Internet and electronic networking in the provision of information services and the difference which this makes in the utilization of information.

While focussed on Latin America and the Caribbean, it responds to the identified needs in all regions for the development of national and institutional policies relating to the Internet and to electronic networking. With the increasing de-regulation of the policy environment and a variety of opportunities for Internet access and for configuring electronic networking services, the potential for use by development institutions is significant, but at the same time policy makers and managers need to understand the practical implications of such wide-ranging developments, and to determine their practical relevance.

The **Network of Networks - Latin America** is a regional mechanism which was formed in 1990, and which now links 16 regional information systems. It has facilitated activities and experiences in electronic networking among its member institutions and has enabled the participating organizations to incorporate electronic communication into the management of these regional systems.

The project will therefore build upon the existing regional capacity, and will first demonstrate to policy makers and decision makers the effects of using electronic networking for accessing information, while identifying quantitative and qualitative aspects of the impacts on policy formulation in the areas of: social policies for participation in decentralization, productive enterprise development, sustainable aspects of environmental management techniques, and information policies for electronic networking.

This paper will describe a project for researching the issues and questions which relate to the impact of electronic networking on the access to and use of information. It is focussed on analyzing the role of information and the use of electronic networking in social policy, sustainable enterprise production, environmental aspects of sustainable development and information policies for electronic networking. The project activities and results will contribute to the regional dialogue on information policy formulation and to increased capacity for information policy development.

The research focus responds to the identified need for the development of national and institutional policies relating to electronic networking. Currently in the Latin American and Caribbean region, there are increasing new Internet connections and the potential for use by development institutions is significant. On the other hand, it is increasingly difficult for policy-makers and managers of these institutions to determine the practical relevance of such

wide-ranging developments or to determine the truly important uses and trends amidst all the commercial and media hype.

The region also needs to have the capacity to develop policies for universal access to the Internet and to similar facilities. This research will facilitate the definition and implementation of institutional policies for electronic networking and Internet access in the participating organizations. It will do this by demonstrating to policy-makers and decision-makers the role and significance of electronic networking in the process of access to information for policy formulation and decision-making in the region.

The methodology recognizes that the information society can be considered as having three components: the technology on which the systems are based, the products and services produced, and most importantly, the benefits and social and organizational changes that will result. Advances in telecommunications can also be expected to provide users with the right infrastructure, and the possibility to access, review and use large amounts of data. This is recognized by the proponents as having the potential for creating new opportunities for individuals and institutions.

The potential number of applications is so great that it has tended to obscure some practical considerations. While the Internet has already shown that there is a vibrant demand for electronic content and services, the utility of the innovations is unclear to many potential users and policy-makers. Monitoring the utilization and measuring the impact through this research will provide a means of demonstrating to policy-makers the utility of many of the innovations, and will help identify the areas in which these services can result in maximum benefits to their institutions and to society.

The project is therefore designed to provide policy-makers and decision-makers with the basis for assessing and understanding the role of these technologies in the context of their own practical experiences in the processes of policy formulation and decision-making.

The methodology consists of four main elements:

- Selection of a sample of twenty policy/decision-makers from each regional information system which will form the target group, and consolidation of information on their information needs and information-seeking behaviour;
- Adjustment of the products and services of the networks and delivery via the Internet and other electronic services to meet these needs;
- Channelling knowledge gained in the process of the assessment into policy-making at the institutional, national and regional levels; and

- Analyses of the impact of information and the use of electronic networking on policy formulation, in the areas of social policy, sustainable enterprise production, environmental aspects of sustainable development, and information policies for electronic networking.

The implementation of the methodology will also benefit from the existence of the IDRC supported global network on the impact of information on development, and the **Preliminary Framework for Impact Assessment** (Menou ed 1993). In particular, it will use a modified version of the quantitative and qualitative analyses of the assessment indicators defined by Noel Boissière (McConnell ed 1995) under the project **Assessing the Impact of information on policy formulation in the Caribbean**.

Although this methodology has been defined, it still needs to be tested in the environment of the participating user clientele. The assumption is that the basis of the methodology will require some adjustments at the outset and will be usable for the case studies and the other aspects of the research.

It is recognized that there may be technical difficulties for some participants to quickly access the information services, and these will need to be evaluated periodically by the network managers to ensure that the technical problems can be solved during the life of the project.

Research on the use of electronic communication raises some ethical questions, which will affect the level of monitoring permitted. For example, while it is generally permitted to review participation in electronic conferences, similar monitoring of the contents of electronic mail will not be permitted and consequently the evaluation will also depend on the users' consistency in recording their own use of the systems.

Research has shown that gender is a factor which can influence the optimal utilization of electronic networking and other information and communication technologies. The project will deal with this issue mainly by ensuring that there is a fair representation in the target group, and by incorporating the training materials used by the project APC project on Gender and Information Technology in the training programs for the target group.

The research design has been based on the identification of some specific problems including:

- i The increasing deregulation of value-added network services, which provide electronic mail, managed data network services, and access-to-information services, requires mechanisms at the institutional levels to deal with this less-regulated policy environment;
- ii Managers of institutions lack an understanding of the pros and cons of the role of electronic networking in facilitating information and communication flows;

- iii In developing local components of the information infrastructure, governments and local organizations often rely exclusively on external consultants because there is not a well identified regional forum for discussing these issues or for sharing experiences; and
- iv There is still need to clearly demonstrate to decision-makers the role and significance of electronic networking in the processes of access to information for policy formulation and decision-making in the region.

The above problems signal that there is need for research and communication activities which can demonstrate the role of electronic networking in increasing access to information. This research will focus on identifying, with the participation of policy-makers and decision-makers, the impacts and potential impacts of these media. This research will demonstrate the role of electronic networking in increasing access to information, and subsequent use of this information for policy formulation. The process will also improve the linkages among the players in the information sector and those in other fields.

The *Network of Networks - Latin America* was convened in 1990 as a result of a series of regional consultations among representatives of 18 regional organizations which function as information providers. The project, which was supported by IDRC was recently completed. It has been successful in capitalizing on the experiences and specializations of the regional information systems. With the coordination of Asociacion Latinoamericana de Instituciones Financieras de Desarrollo (ALIDE), four working modules were developed to guide the repositioning of the regional information systems and adjustment to new challenges. By implementing the modules on a shared basis, four lead regional information systems spearheaded use of computer-based communication (by AlterNex/Instituto Brasileiro de Analisis Sociales Economicas (IBASE)), training in new issues in information management (by Comision Latinoamericana para America Latina (CEPAL) / Centro Latinoamericano de Documentacion Economica y Social (CLADES), training in marketing of information services and products (by Centro de Investigacion y Desarrollo de la Educacion n (CIDE/REDUC), and decentralized access to the databases of the regional information systems (through the cooperative Red de Redes CD-ROM produced by Centro Latinoamericano y del Caribe de Informacion en Ciencias de la Salud (BIREME)).

As a result, the participating information specialists and users have been able to improve communication and access to information on a decentralized, multidisciplinary basis. Of particular note is the fact that the training and orientation provided by AlterNex stimulated the regional organizations to utilize computer-based communication and Internet services for communicating with users and for delivering information products and services. At present, all the participating regional information systems use electronic mail and computer conferencing for inter and intra-system communication, and in addition six of the organizations have established points of Internet access, with Gophers and Web sites.

The participating regional information systems will therefore provide the framework for the proposed research activity. It will first demonstrate to the key users identified in the research the effects of using electronic networking for accessing information, and as a result will measure the impacts on policy formulation in the regional priority areas of (1) social policies for participation in decentralization; (2) productive enterprise development; (3) sustainable aspects of environmental management; and (4) information policies for electronic networking.

- Analyses of the impact of information and the use of electronic networking on policy formulation, in the areas of social policy, enterprise development, sustainable aspects of environmental management and information policies for electronic networking;
- A core group of policy-makers, decision-makers and analysts, trained in utilizing interactive methods of communication with information providers and systems;
- Development information on Latin America and the Caribbean will be delivered via a Web site linked to Internet sites in the region and via local electronic nodes;
- Increased capacity in formulating policies on electronic networking in organizations participating in the **Network of Networks - Latin America**.

## **OBJECTIVES**

### **General objectives:**

Assess the impact of information and telecommunications on policy formulation in the following regional priority areas:

- social policies for participation in decentralization;
- productive enterprise development;
- sustainable aspects of environmental management; and
- information policies for electronic networking.

### **Specific objectives:**

- a) Consolidate data on the information needs and information-seeking behaviour of the members of the target group;
- b) Train the members of the target group in the use of the electronic networking services available in their countries;

- c) Determine in consultation with the members of the target group the outcomes of information use which can be understood as benefits, establish indicators of impact of information on policy formulation, and establish a matrix of quantitative and qualitative measures for the evaluation;
- d) Develop electronic applications of the current value-added products and services delivered by the individual regional information systems;
- e) Identify the areas of policy formulation and decision-making influenced by the users having electronic access to the information, while isolating other influences on policy formulation which might not be the result of use of the information services; and
- f) Mount a regional discussion group on the Internet where the project results will provide input to the information policy of participating organizations and other organizations in similar circumstances.

## **METHODOLOGY**

The participating regional information systems will work under the coordination of ALIDE to implement the objectives of this research project in an integrated manner. ALIDE will be responsible for the management of the research and for the coordination of the inputs of the regional information systems and the consultants.

It was agreed at the evaluation and project development meeting in Costa Rica in August 1995, that the focus would be on priority areas and the regional information systems will therefore be working in groups according to their own program areas. Each regional information system will undertake its own case study, and the results will be coordinated by ALIDE for productive enterprise development, in collaboration with Consejo Latinoamericano de Ciencias Sociales (CLACSO) for social policy, and Centro Panamericano de Ingeniería Sanitaria y Ciencias del Ambiente (CEPIS/REPIDISCA), for environmental management.

### **Consolidation of Data on the Information Needs of the Target Group**

Current users of the regional information systems products and services, who are involved in policy formulation and decision-making at local, national and regional levels will form the target group. Each regional information system will identify twenty users to compose the target group and to participate in the research.

The regional information system managers will initially organize and consolidate the information which they have gathered on their clientele and their information needs and will undertake detailed analyses of the twenty selected users, their information needs and information-seeking behaviour, to be updated at intervals over the life of the project.

These users, some of whom participated in the seminars on information management mounted by CEPAL/CLADES between 1992-1995, in the project **Network of Networks - Latin America**, have been identified by the regional information systems to participate in the research. They will be further trained in the use of electronic communication, conferencing and Internet access, and will be required to provide feedback on the impact of their information use on their activities of policy monitoring, policy formulation, and decision-making.

The methodology for the study of the users' needs will build on that used by Institute of Social and Economic Research of the University of the West Indies, in the IDRC supported project **Assessing the impact of information on policy formulation**. A modified version will be prepared by ALIDE and discussed on the electronic conference in preparation for its implementation by the member regional information systems.

ALIDE and the regional information systems, with guidance from the consultant, will analyze the survey results and will present this analysis to the participating organizations for incorporation into the strategic planning of each organization and regional information system.

### **TRAINING OF THE TARGET GROUP IN ELECTRONIC NETWORKING**

To ensure that there will be adequate capacity for using and exploiting the benefits of electronic mail, computer conferencing and specialized Internet services, training courses will be mounted for the members of the target group.

The courses will be mounted locally, at nodes of the Network of Networks - Latin America or the Association for Progressive Communication, or at other local nodes. This will build on the experience of AlterNex and other nodes in training the members of the Network of Networks - Latin America, and other groups.

During the training workshops and the follow-up online sessions, users will be advised of the most suitable connections in their own countries, and appropriate modems and the options of front-end software for efficient connections to the Internet. The computer conference *redes.al* on AlterNex will be used as the online meeting place for these consultations. This aspect of the methodology will be able to utilize the materials used in the training of the information specialists and some end-users in the network of Networks project. These materials will mainly be those used by the APC Networks and CLACSO.

### **DEFINITION OF INDICATORS - BENEFITS, OUTCOMES AND IMPACT**

In this context, policy-making will be considered as the determination of broader issues resulting in laws, establishment of organizations or programs, taxation or tax relief, etc. Decision-making will on the other hand be considered as being on a more specific level, and relating to decisions



on how to implement a policy. There is naturally continuity between the areas and therefore while policy implementation is expected to be a more active aspect, decision-making is still necessary at each stage of moving the policy from a concept to a reality.

Measuring the impact of the information services used over time will enable the target group to record the effects of the access to electronic networking, and the ways in which they have used the information acquired in the processes of policy formulation and decision-making. These records will enable the managers of the regional information systems to identify changes in the results. The focus will be on benefits or outcomes resulting from the use of electronic networking and use of the information services and products obtained from each regional information system.

Focus groups of users will be held in conjunction with the assemblies and other general meetings of the participating regional institutions. In addition the regional information system managers and their representatives will interview members of the target group to discuss the project objectives and modus operandi, and to receive feedback on the applicability of the indicators proposed. ALIDE, CLACSO and CLAD have identified as examples their annual assemblies where such interaction with decision makers takes place and where consultations with or training of the target group can be accomplished.

#### Impact assessment indicators

The research will utilize the assessment approach developed with the support of a series of IDRC-supported projects, which resulted in a "***Preliminary Framework for Measuring the Impact of Information on Development***".

The related consultations concluded that:

- the assessment process must be a user-driven, ongoing process;
- indicators need to be selected for specific situations; and
- the target audiences (users of the assessment) must be clearly identified.

The preliminary framework (Menou 1993) suggested several types of indicators. Those related to performance and impact have been particularly selected as indicators derived as a consequence of use of the information services and related usage (input factors) to outcomes (output benefits). Consultation with policy makers and decision makers was the first step of the project ***Assessing the impact of information on policy formulation in the Caribbean***, in January 1995, Chambers and Boissière (1995) proposed the following seven impact indicators which are currently being used in that project.

## **OUTCOMES/BENEFITS**

### **User satisfaction**

Chambers and Boissière (1995) propose that user satisfaction incorporates the degree of satisfaction relative to the investment of effort and money to acquire the information and whether or not the need(s) were met. This is seen initially as a qualitative measure, and will depend on the users' judgment, and the anecdotal evidence provided in the evaluation. While the impact of electronic networking will be an important aspect of the benefits and outcomes, this will also be combined with the assessment of the content delivered and its use in policy formulation or decision-making.

## **STATUS MEASURES**

Use per capita (frequency of use of services) in the target group  
Number of users in the wider "target population"

Measures related to the content and quality of information received  
Improved analysis and decision-making  
Improvement in preparedness, skills and effectiveness in negotiations  
Access to information and ideas, contacts with colleagues.

## **MEASURES RELATED TO THE CHANNELS BY WHICH THE INFORMATION IS RECEIVED**

Increased flexibility of access  
Presentation in more user-friendly formats

## **OTHER MEASURES**

Time saved

These measures will be used in implementing the current project, as the basis for discussion with the members of the target group, and for developing the set of indicators to be used in the research.

The measurement of impact will utilize a combination of quantitative and qualitative measures. Boissière prepared a matrix for the UWI/ISER project which will provide the base of the methodology for defining the quantitative and qualitative measures for the evaluation and for translation of the indicators defined to measures.

Channels of feedback on users responses exist in all the regional information systems, but need to be formalized by the regional information system managers in collaboration with the national focal points of each regional information system. The emphasis will also be on feedback relating to the indicators selected for final application. Each regional information system manager will study the situation and adjust the current procedures as necessary. The proponents recognize the need for separate approaches to assessing impact in the different fields and consequently will be

undertaking the case studies with a view to identifying the different characteristics of users and utilization the different fields.

#### **DEVELOPMENT OF ELECTRONIC APPLICATIONS OF CURRENT PRODUCTS AND SERVICES**

On the basis of the experience of the regional information system managers, and the consultation with the target group, each regional information system will select among its present products and services and identify those to be delivered to users via the Internet and local regional information systems. These will provide analyses of the state-of-the-art of the priority topics identified for the focus of the project. The products will be modified in accordance with the findings of the user survey, and the requirements for electronic publishing as against printed products. These products and services will provide the final definition of information services to be evaluated during the research.

This process will build on the experience of CLACSO in developing state-of-the-art analyses in the areas of governance and democracy, and of CLAD in analyzing the status of decentralization in the region. It is proposed to develop a Web site at IDRC which will provide links to the Web sites of the regional information systems, access to the value added products and services selected for the evaluation, as well as the Red de Redes CD-ROM produced under the earlier project.

Information services are currently provided directly to the target group and the national focal points ensure that there are local points of access to the regional outputs of the regional information systems in each of the countries. This is the procedure which will continue during the project, but adjustments may be made according to feedback from the users.

#### **IDENTIFYING AREAS OF POLICY FORMULATION AND DECISION-MAKING INFLUENCED**

Each regional information system manager will undertake an assessment as part of the case study to obtain feedback, to collect measurement data, and to identify the links between provision of the new information services, and the impact in policy monitoring, policy formulation, and decision-making.

The data will be collected according to the set of outcomes, benefits, and measures selected, and outlined in the modified Boissière matrix which will be defined by the consultant in consultation with selected users.

#### **EVALUATION and FEEDBACK**

End of Year 1

## **REVIEW AND ADJUSTMENT OF SERVICES**

The results of the evaluation will be incorporated into the Internet discussion group which will be mounted to discuss the findings of the evaluation and the impact of the services. The regional information system managers will also hold consultations with heads of organizations during the annual assemblies of each regional organization. This will build on the experience of ALIDE which has been incorporating sessions on the information regional information system and services at the annual assemblies of the association.

Year II

## **ADJUSTMENT OF SERVICES BY THE REGIONAL INFORMATION SYSTEMS**

### **DELIVERY OF PRODUCTS AND SERVICES**

### **FINAL EVALUATION AND FEEDBACK**

End of year 2

The results of the evaluation of the second year will be analyzed by the participants of the project - users and information providers in an online conference which will also be used for disseminating the results of the project to a wider audience.

The results of this research will impact on several levels:

The 240 users will be able to gain a better understanding of the role of electronic communication, while being able to more effectively develop their institutional policies, and participate in local and national policy making.

## REFERENCES

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